

CLAIMS

I claim as my invention:

1. A device for filling empty medicine capsules with a filler material comprising
 - a) a base having an enclosure and a central shaft having a vertical axis of rotation,
 - 5 b) power means for rotating said shaft within said enclosure,
 - c) a removable upper cover for said enclosure having a central inlet opening coaxial with said shaft,
 - d) a capsule holder disk connectable to said shaft for rotation therewith, and having a plurality of peripherally evenly spaced holders each adapted to receive and
10 support an unfilled open capsule with its open end directed upward,
 - e) a distribution drum associated and aligned with said capsule holder disk for rotation therewith as a unit, said distribution drum having
 - i) a peripheral collection surface,
 - 15 ii) an impeller plate having an impact point concentric with said shaft for receiving filler material introduced at said impact point and flinging it radially against said peripheral collection surface by centrifugal force during rotation, thereby spreading and holding the material in an even layer upon said peripheral collection surface during rotation, and
 - 20 iii) a plurality of uniformly spaced collection pockets in a peripheral array beneath said peripheral collection surface and adapted to receive and collect said filler material flowing by gravity therefrom, each said pocket being generally funnel-shaped with a downward-directed discharge opening aligned with an associated holder of said capsule holder disk, whereby upon the cessation of rotation a substantially equal quantity of filler material flows by

gravity from the peripheral collection surface into each collection pocket, and thereafter through the collection pocket discharge openings into each open capsule.

2. The device of claim 1 in which the distribution drum has a removable lid for preventing escape of filler material from the drum, said lid having a central opening for directing filler material onto the impact point of said impeller plate.
3. The device of claim 2 in which the cover has an inlet funnel above said central opening for directing filler material into said opening.
4. The device of claim 1 in which said impeller plate has an upstanding conical flow splitter at its central impact point.
5. The device of claim 1 in which the impeller plate has radial guide ribs for propelling and distributing filler material radially from the central impact point toward the inner collection surface while rotating.
6. The device of claim 1 in which each of the peripherally evenly spaced capsule holders in the capsule holder disk includes a channel for application of vacuum for holding a capsule in each of said holders.
7. The device of claim 6 including of a source of positive gas pressure for ejecting a capsule from each of said holders.
8. The device of claim 6 including an ejector pin controllably introduceable into each of said holders from below.
9. The device of claim 1 in which said central inlet opening includes a filter screen to prevent clumps of material from dropping onto said distribution drum.

10. The device of claim 1 including a microprocessor controller and data input means for providing to the controller information including the number of capsules to be filled, the type of filler material, the speed and duration of drum rotation during a filling operation, and output means for creating a record of said information in the form of a label.
11. The device of claim 1 in which the distribution drum is made of inexpensive molded plastic for one-time use.
12. The device of claim 1 in which the distribution drum, capsule holder disk and capsule holders comprise a single unit.
13. The device of claim 1 in which the distribution drum and impeller plate are separately rotatable at different speeds and directions of rotation relative to one another.
14. The method of filling medicine capsules comprising the steps of
- a) placing a plurality of unfilled capsules in an evenly spaced peripheral array in a rotatable capsule holder disk with their open ends upward,
 - b) joining said capsule holder disk with a distribution drum having an impeller plate having an impact point concentric with said shaft for receiving filler material introduced at said impact point and flinging it radially against a peripheral collection surface, said distribution drum having a plurality of uniformly spaced collection pockets in a peripheral array beneath said peripheral collection surface, and adapted to receive and collect said filler material flowing by gravity therefrom, each said pocket being generally funnel-shaped with a downward-directed discharge opening aligned with an associated capsule holder of said

capsule holder disk, said capsule holder disk and distribution drum forming a rotatable assembly,

- c) rotating said assembly, and during rotation introducing a known quantity of filler material at the impact point of said impeller plate, whereby the material is flung
5 by centrifugal force substantially uniformly over the circumference of said peripheral collection surface,
- d) stopping the rotation of said assembly, whereby a substantially equal quantity of filler material flows by gravity from the peripheral collection surface into each collection pocket, and thereafter through the collection pocket discharge opening
10 into each open capsule.